

Amendments to the Claims

The Listing of Claims presented below will replace all prior versions, and listings, of claims in the application.

Listing of Claims

Claims 1-74. (Canceled)

75. (Previously presented) A chemical testing apparatus comprising:
an optical fiber providing a linear support conducting light along a length between two ends; and

a combinatorial library of probe compounds attached at discrete locations along the length of the optical fiber in a predetermined pattern, the probe compounds positioned to be exposed to target compounds applied to the optical fiber.

76. (Previously presented) The chemical testing apparatus of claim 75 wherein the probe compounds are peptides.

77. (Previously presented) The chemical testing apparatus of claim 75 further including a light source providing light conducted along the optical fiber to detect modification of the probe compounds during reaction with the target compounds.

78. (Previously presented) The chemical testing apparatus of claim 77 wherein the light source is attached to at least one end of the optical fiber to transmit light by internal reflection along the length of the optical fiber to interact with multiple different probe compounds.

79. (Currently amended) The chemical testing apparatus of claim 75 wherein the probe compounds are placed on the ~~light~~ optical fiber to couple with evanescent waves through the fiber.

80. (Previously presented) The chemical testing apparatus of claim 75 wherein the probe compounds repeat with a predetermined spatial pattern.

81. (Previously presented) The chemical testing apparatus of claim 75 further including a light sensor receiving light from the optical fiber to distinguish among light interacting with different probe compounds.

82. (Previously presented) The chemical testing apparatus of claim 81 further including a means for Fourier analysis of light received from the light sensor.

83. (Currently amended) A method of testing an analyte having target compounds, the method comprising the steps of:

- (a) preparing an optical fiber with a combinatorial library of probe compounds attached at discrete locations along ~~[[a]]~~ the length of the optical fiber in a predetermined pattern;
- (b) exposing the prepared optical fiber to target compounds in an analyte; and
- (c) photometrically analyzing the exposed and prepared optical fibers to detect reaction of the probe compounds with the target compounds from the analyte.

84. (Previously presented) The method of claim 83 wherein the probe compounds are peptides.

85. (Previously presented) The method of claim 83 further wherein the step of analyzing conducts light along the optical fiber to detect modification of the probe compounds during reaction with the target compounds.

86. (Currently amended) The method of claim 85 wherein the light source is attached to at least one end of the optical fiber to transmit light by internal reflection along the length of the optical fiber, whereby light from the light source is capable of interacting to interact with multiple different probe molecules.

87. (Previously presented) The method of claim 83 wherein the probe compounds are placed on the optical fiber to couple with evanescent waves through the fiber.

88. (Previously presented) The method of claim 83 wherein the probe molecules repeat with a predetermined spatial pattern.

89. (Currently amended) The method of claim 83 further including the step of receiving light conducted along the optical fiber at a light sensor capable of distinguishing to distinguish among light interacting that has interacted with different of the probe molecules.

90. (Currently amended) The method of claim 89 further including the step of conducting a Fourier analysis of the ~~received~~ light received by the light sensor.